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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,602	09/15/2003	Chang-Ning Huang	M61.12-0514	2369

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EXAMINER	
SAINT CYR, LEONARD	
ART UNIT	**PAPER NUMBER**
2626	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/662,602	HUANG ET AL.	
	Examiner	Art Unit	
	Leonard Saint-Cyr	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 15, 16, and 18 are objected to because of the following informalities: Claim 10 is not a method claim, thus claims 15, 16, and 18 cannot be depended on method of claim 10. Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 10 - 16, and 18 are directed to non-statutory subject matter. From a technological standpoint, a signal encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words; a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.

Thus, such signal claim is ineligible for patent protection because it does not fall within any of the four statutory classes of § 101. Accordingly, the subject matter of claims 10 – 16, and 18 is held to be non-statutory subject matter.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 – 16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Wu (Customizable Segmentation of Morphologically Derived Words in Chinese; February 2003).

As per claim 1, Wu teaches a corpus stored in a computer-readable medium for training a language model, the corpus comprising:

a plurality of characters (page 9, paragraph 4, lines 6, and 7);

a plurality of morphological tags ("MDWs are tagged") associated with a plurality of sequences of characters, the plurality of morphological tags indicating a morphological type ("categories of morphological") of an associated sequence of characters and a combination of parts forming a morphological subtype ("suffixes"; page 9, paragraph 4, lines 6, and 7; page 21, section 3.4, line 11 - 16; page 4, lines 17 – 21; page 12, section 2.5.2, line 9).

As per claim 2, Wu further discloses that morphological type is one of affixation, reduplication, split, merge and head particle (page 4, lines 17 – 21).

As per claim 3, Wu further discloses that morphological type is an affixation and the combination of parts includes a word and at least one of a prefix and a suffix (page 4, lines 17 –21; page 12, section 2.5.2, line 9).

As per claim 4, Wu further discloses that combination of parts indicates a part of speech for the word ("verb or adjective"; page 7, section 2.3, line 6).

As per claim 5, Wu further discloses that morphological type is a reduplication and the combination of parts includes a pattern of characters (page 5, section 2.1, lines 1 – 2).

As per claim 6, Wu further discloses that morphological type is a merge and the combination of parts includes a pattern of characters ("ABAB, AABB, AXA, AXAY"; page 5, line 20; page 5, section 2.1, lines 1 – 2).

As per claim 7, Wu further discloses a plurality of factoid tags providing indications of whether a sequence of characters is a named entity (page 4, line 21).

As per claim 8, Wu further discloses a plurality of named entity tags providing indications of whether a sequence of characters is a named entity (page 4, line 21; page 21, section 3.4, lines 11 – 13).

As per claim 9, Wu further discloses an indication ("lexicalized in the dictionary because they have been lexicalized in a Chinese speaker's mind") of whether a sequence of characters is contained in a lexicon (page 16, paragraph 3, lines 1 - 4).

As per claim 10, Wu teaches a computer readable medium having instructions for performing word segmentation, the instructions comprising:

receiving an input of unsegmented text; accessing a language model to determine a segmentation of the text (page 19, line 12; page 9, paragraph 4, lines 6, and 7);

detecting a morphologically derived word in the text (page 7, paragraph 2, lines 1, and 2); and

providing an output of segmented text and indication ("output of word segmentation") of a combination of parts ("suffixes") that form the morphologically derived word (page 3, line 25; page 12, paragraph 2.5.2, line 9).

As per claim 11, Wu further discloses that morphological derived word is one of an affixation, reduplication, split, merge and head particle (page 4, lines 17 – 21).

As per claim 12, Wu further discloses detecting a lexicon in the text ("lexicalized in the dictionary because they have been lexicalized in a Chinese speaker's mind"; page 16, paragraph 3, lines 1 - 4).

As per claims 13 and 14, Wu further discloses detecting a factoid and a named entity in the text (page 4, line 21).

As per claim 15, Wu further discloses indicating a part of speech for the combination of parts ("verb or adjective"; page 7, section 2.3, line 6).

As per claim 16, Wu further discloses indicating a pattern of characters forming the combination of parts ("ABAB, AABB, AXA, AXAY"; page 5, line 20; page 5, section 2.1, lines 1 – 2).

As per claim 18, Wu further discloses providing indications of whether the word is lexicon, a morphological derived word, a factoid and a named entity (page 4, line 21; page 7, paragraph 2, lines 1, and 2; page 16, paragraph 3, lines 1 - 4).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 17, and 19 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (Customizable Segmentation of Morphologically Derived Words in Chinese; February 2003).

As per claim 17, Wu teaches a method of developing a corpus for training a language model, comprising:

extracting a list of potential words (50 word-formation rules) from a corpus that match defined words and rules (page 14, section 3.1, lines 3 – 6; page 24, section 4, line 12);

annotating ("additional annotation") the corpus to provide indication of word type ("named entities"; page 12, section 2.5.2, line 10);

and providing morphological tags ("MDWs are tagged") in the corpus indicating a morphological type ("categories of morphological") of an associated sequence of characters and a combination of parts forming a morphological subtype ("suffixes"; page 9, paragraph 4, lines 6, and 7; page 21, section 3.4, lines 11 – 13; page 4, lines 17 – 21; page 12, section 2.5.2, line 9).

Wu does not specifically teach determining if the list includes a sufficient number of defined words and rules. However Wu teaches those 50 word–formation rules covering all the cases of the morphological process (page 14, section 3.1, lines 3 – 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine whether the list is sufficient, so that enough options can be provided to adapt the segmentation to any reasonable standard (page 18, lines 5 – 7).

As per claim 19, Wu further discloses that morphological type is one of affixation, reduplication, split, merge and head particle (page 4, lines 17 – 21).

As per claim 20, Wu further discloses indicating a part of speech for the combination of parts ("verb or adjective"; page 7, section 2.3, line 6).

As per claim 21, Wu further discloses indicating a pattern of characters forming the combination of parts ("ABAB, AABB, AXA, AXAY"; page 5, line 20; page 5, section 2.1, lines 1 – 2).

As per claim 22, Wu further discloses after providing morphological tags in the corpus, using said corpus to annotate a larger amount of text ("tag our text"; page 21, section 3.4, lines 11, and 12).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Halstead, Jr et al., (US Patent 5,963,893) teach identification of words in Japanese text by a computer system.

Brockett et al., (US Patent 6,968,308) teach a method for segmenting non-segmented text using syntactic parse.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard Saint-Cyr whose telephone number is (571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LS
02/06/07

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER